

Abstract of the Disclosure

A method is for calibration of a transformation of at least two X-ray attenuation values (which are determined using different X-ray spectra) for a material, to a value for the density and a value for the atomic number of the material. A first distribution is recorded of first X-ray attenuation values obtained from a calibration phantom using a first X-ray spectrum, and a second distribution is recorded of second X-ray attenuation values obtained from the calibration phantom using a second X-ray spectrum. The recorded X-ray attenuation values are used to produce a density function and to produce an atomic number function. A value for the density and for the atomic number of the calibration sample is determined with the aid of the density function and the atomic number function, and a discrepancy between the determined values and the actual density and atomic number of the calibration sample is found. The discrepancy is used for producing a mapping rule which changes the values determined by the density function and the atomic number function to the actual values.